I.F. PENTODE

Pentode intended for use as I.F. amplifier in television receivers.

QUICK REFERENCE DATA			
Anode current	I_a	10	mA
Transconductance	S	15	mA/V
Amplification factor	$\mu_{g_2g_1}$	60	-
Internal resistance	R_i	380	kΩ

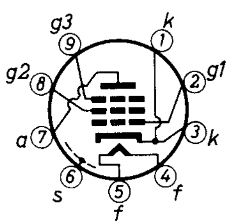
HEATING: Indirect by A.C. or D.C.; parallel or series supply

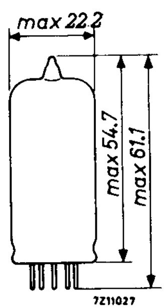
Heater voltage	V_f	6.3	V
Heater current	I_f	300	mA

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval





CAPACITANCES

Anode to all except grid No.1	$C_{a(g_1)}$	3	pF
Grid No.1 to all except anode	$C_{g_1(a)}$	10	pF
Anode to grid No.1	C_{ag_1}	max. 0.0055	pF
Grid No.1 to grid No.2	$C_{g_1g_2}$	2.8	pF

TYPICAL CHARACTERISTICS

Anode voltage	V_a	200	V
Grid No.3 voltage	V_{g_3}	0	V
Grid No.2 voltage	V_{g_2}	200	V
Grid No.1 voltage	V_{g_1}	-2.5	V
Anode current	I_a	10	mA
Grid No.2 current	I_{g_2}	4.1	mA
Transconductance	S	15	mA/V
Internal resistance	R_i	380	kΩ
Amplification factor	$\mu_{g_2 g_1}$	60	-
Input resistance grid No.1 (f = 40 MHz)	r_{g_1}	11	kΩ
Equivalent noise resistance (f = 40 MHz)	R_{eq}	330	Ω

OPERATING CHARACTERISTICS

Anode supply coltage	V_{ba}	170	200	230	V
Grid No.3 voltage	V_{g_3}	0	0	0	V
Grid No.2 supply voltage	V_{bg_2}	170	200	230	V
Grid No.2 resistor	R_{g_2}	0	7.5	15	kΩ
Cathode resistor	R_k	140	140	140	Ω
Anode current	I_a	10	10	10	mA
Grid No.2 current	I_{g_2}	4.1	4.1	4.1	mA
Transconductance	S	15.6	15.6	15.6	mA/V
Internal resistance	R_i	330	510	680	kΩ
Input resistance grid No.1 f = 40 MHz	r_{g_1}	10	10	10	kΩ
Equivalent noise resistance f = 40 MHz	R_{eq}	300	300	300	Ω

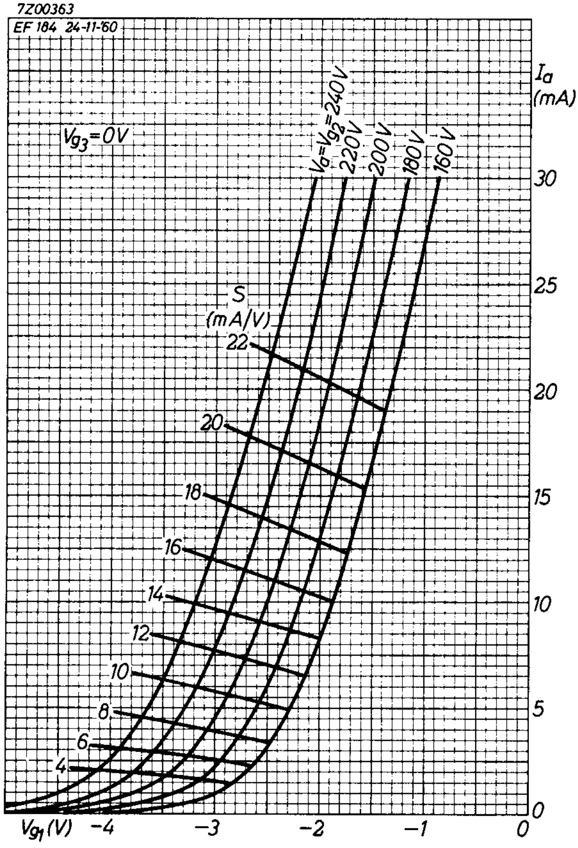
REMARKS

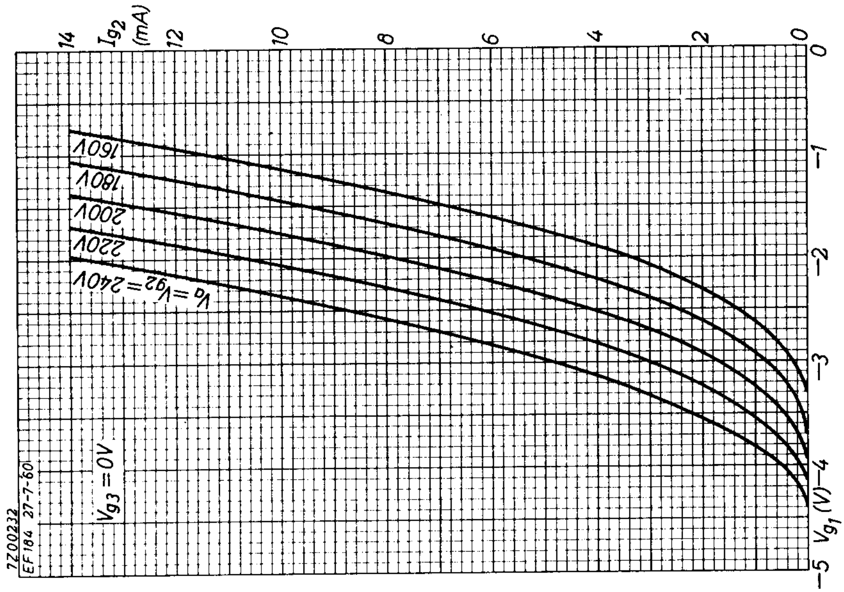
1. Operation with cathode bias resistor is recommended.
2. In order to ensure a good performance with respect to cross-modulation and microphony this tube should not be used in circuits with automatic gain control. For such applications a tube with variable transconductance is recommended.

LIMITING VALUES (Design centre rating system)

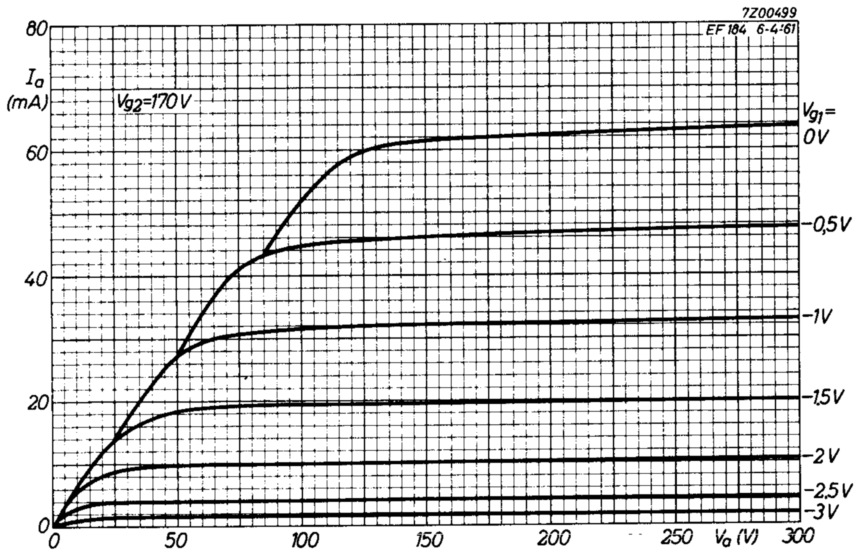
Anode voltage	V_{ao}	max.	550	V
	V_a	max.	250	V
Anode dissipation	W_a	max.	2.5	W
Grid No.2 voltage	V_{g2o}	max.	550	V
	V_{g2}	max.	250	V
Grid No.2 dissipation	W_{g2}	max.	0.9	W [1]
Grid No.1 voltage, negative peak	$-V_{g1p}$	max.	50	V
Cathode current	I_k	max.	25	mA
Cathode to heater voltage	V_{kf}	max.	150	V
Grid No.1 resistor	R_{g1}	max.	1	MΩ

[1] During a heating-up period not exceeding 15 seconds this value may be max. 1.5 W. At the values of R_{g2} specified under "Operating characteristics" there will be no risk of exceeding the maximum permissible value of W_{g2}.

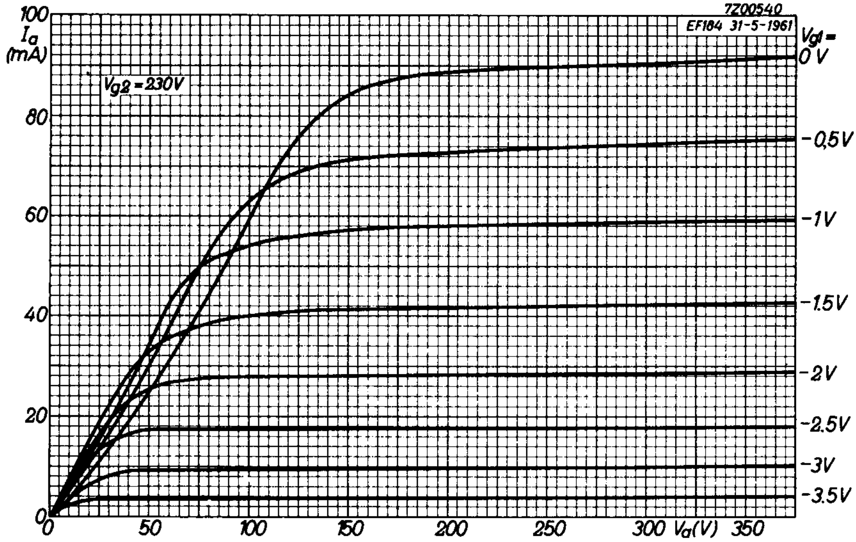

7Z00363
EF 184 24-11-'60
V_{g3}=0V
V_a=V_{g2}=240V
220V
200V
180V
160V
I_a (mA)
S (mA/V)
22
20
18
16
14
12
10
8
6
4
V_{g1} (V)
−4
−3
−2
−1
0
30
25
20
15
10
5
0

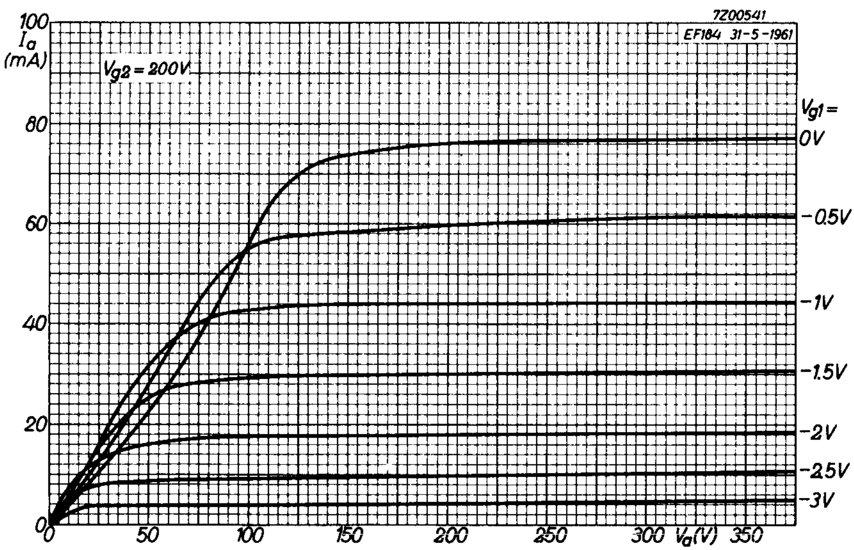


Ig2 (mA)
14
12
10
8
6
4
2
0
0
-1
-2
-3
-4
-5
Vg1 (V)
160V
180V
200V
220V
Va=Vg2=240V
Vg3=0V
7Z00232
EF184 27-7-60



7Z00499
EF184 6-4-61
80
Ia (mA)
60
40
20
0
Vg2=170V
Vg1= 0V
-0,5V
-1V
-1,5V
-2V
-2,5V
-3V
0
50
100
150
200
250
Va (V)
300


7Z00540
EF184 31-5-1961
I_a (mA)
V_{g2} = 230V
V_{g1} =
0 V
-0,5V
-1V
-1.5V
-2V
-2.5V
-3V
-3.5V
V_a(V)
0
20
40
60
80
100
50
150
200
250
300
350


7Z00541
EF184 31-5-1961
I_a (mA)
V_{g2} = 200V
V_{g1} =
0V
-0.5V
-1V
-1.5V
-2V
-2.5V
-3V
V_a(V)
0
20
40
60
80
100
50
150
200
250
300
350

PHILIPS

Data handbook

Electronic components and materials

EF184

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